REMARKS

Claims 1-7 and 11-16 are pending. Claims 8-10 are canceled, claims 1-2 and 4-5 are amended, and claims 11-16 are added with this response. Reconsideration of the application in light of the above amendments and the following remarks is respectfully requested.

I. REJECTION OF CLAIMS 1-3 UNDER 35 U.S.C. § 102(e)

Claims 1-3 were rejected under 35 U.S.C. § 102(e) as being anticipated by U.S. Patent No. 6,787,912 (Lane et al.). Withdrawal of the rejection is respectfully requested for at least the following reasons.

Claim 1 is directed to a copper interconnect structure, wherein a barrier layer resides in a trench. The barrier layer has a thickness associated with a horizontal surface of the trench that is different than a thickness thereof associated with a vertical surface of the trench. Lane et al. do not teach this feature. Rather, the cited reference discloses a barrier layer in a trench having a thickness that is substantially the same on vertical and horizontal surfaces thereof, as illustrated, for example, in Figs. 1 and 3. While Lane et al. discuss a gradient associated with the barrier layer, such gradient does not correspond to a thickness of the barrier layer, but rather corresponds to a composition thereof, for example, as illustrated in Fig. 2 and the corresponding text. Therefore Lane et al. fail to anticipate the invention of claim 1. Accordingly, withdrawal of the rejection is respectfully requested.

II. REJECTION OF CLAIMS 4-7 UNDER 35 U.S.C. § 102(e)

Claims 4-7 were rejected under 35 U.S.C. § 102(e) as being anticipated by U.S. Patent No. 6,713,373 (Omstead). Withdrawal of the rejection is respectfully requested for at least the following reasons.

Claim 4 is directed to a copper interconnect structure having a trench formed in a dielectric that overlies a semiconductor substrate. The trench has both vertical and

horizontal trench surfaces. A barrier layer resides within the trench and a thickness of the barrier layer is different on the vertical surface and horizontal surface, respectively. Omstead does not teach such a structure. Rather, Omstead teaches a trench having a barrier layer, however, the barrier layer appears to be uniform in thickness, as illustrated in Fig. 4. Further, Omstead teaches that the barrier layer is conformal within the trench which, in conjunction with Fig. 4, implies that the thickness of such barrier is substantially equal on both vertical and horizontal surfaces of the trench. Therefore Omstead does not anticipate the claimed invention. Accordingly, withdrawal of the rejection is respectfully requested.

III. CONCLUSION

For at least the above reasons, the claims currently under consideration are believed to be in condition for allowance.

Should the Examiner feel that a telephone interview would be helpful to facilitate favorable prosecution of the above-identified application, the Examiner is invited to contact the undersigned at the telephone number provided below.

Should any fees be due as a result of the filing of this response, the Commissioner is hereby authorized to charge the Deposit Account Number 20-0668, TI-36294.

Respectfully submitted,
ESCHWEILER & ASSOCIATES, LLC

By _____
Thomas G. Eschweiler
Reg. No. 36,981

National City Bank Building
629 Euclid Avenue, Suite 1210
Cleveland, Ohio 44114
(216) 502-0600

CERTIFICATE OF MAILING (37 CFR 1.8a)

I hereby certify that this paper (along with any paper referred to as being attached or enclosed) is being deposited with the United States Postal Service on the date shown below with sufficient postage as first class mail in an envelope addressed to: Mail Stop Amendment, Assistant Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

Date: October 26, 2005

Christine Gillroy

Christine Gillroy